WATER ALLOCATION PROGRAM DEVELOPMENT
STREAMFLOW STANDARDS SUBCOMMITTEE MEETING

MINUTES OF MEETING
July 23, 2003

Present: Alicia Good, Ralph Abele, Al Bettencourt, Rich Blodgett, Kathy Crawley, Steve Donohue, John Hermance, Eugenia Marks, Elizabeth Scott, Harold Ward, Carlene Newman, Alisa Richardson, Terry Walsh, Theodore Peters,

Handouts:
by DEM:
•   draft minutes to June 9, 2003 meeting for acceptance
•   streamflow standard subcommittee mission statement with guiding principles

Approval of Minutes:
Draft minutes from June 9, 2003 meeting were finalized.

Overview of CT's Recommendation for Watershed Specific Standard by Ralph Abele

In 1997 CT asked for EPA's assistance in evaluating the downstream affects on the Quinebaug River caused by the Pacific Gas and Electric's power plant which withdraws water from the river for cooling, losing 75% of it to evaporation. In a joint EPA, CT, MA and Pacific Gas and Electric effort, Mark Bain of Cornell was hired to conduct a large study to define baseline hydrologic conditions, biological conditions and target fish communities. At about same time Piotr Parasiewicz had come to Cornell from Austria where he had expertise using MesoHABSIM. This modeling methodology was used as part of the study of the Quinebaug River. An ideal streamflow method should incorporate biology, geomorphology, hydrology and conductivity. MesoHABSIM does this using good science. The panel involved in CT's issue 7, streamflow standards, decided that MesoHABSIM should be recommended as the methodology to use for CT's long term approach to watershed based streamflow evaluations.

Presentation of MesoHABSIM by Piotr Parasiewicz:

MesoHABSIM is a further development of PHABSIM, physical habitat simulation, which describes the distribution of the physical parameters that are relevant to fish; flow, depth, velocity, substrate and cover. At the scale of hydromorphologic units of riffles, pools and runs, MesoHABSIM takes this model further by predicting the biology, based on the broad range of physical parameters. In addition, it has been adapted to be applied more broadly spatially, over an entire river or watershed instead of being limited to a portion of a river.

The entire river is surveyed to obtain additional information on the physical characteristics. A biological survey is completed to determine the habitat selection criteria and existing biological status of the river. A target fish community is developed to determine what native fish species were in the river and at what proportions. The native species are determined through a comprehensive literature search followed by an assessment by a regional biologist to determine which of the native species would be most common in the river under natural conditions. This selection of species of interest drives what most basic characteristics of the riverine system

should be restored and/or preserved. The entire river is mapped to determine habitat distribution at low flow. Fish data are collected at numerous selected mesohabitats as defined in the mapping effort. The mapping and fish data are used to determine the probability of fish presence in the mesohabitats. Rating curves are developed for relative habitat area vs. flow for each of the target species. The information generated for each species is then combined. In order to combine the data, species competition must be considered. Habitat distribution among the species at different flows (spatially and temporally) is compared with the target fish community. By analyzing the species composition at different flows and comparing it with the target fish community structure, the optimum flow can be determined. This optimum flow is the flow that best supports the target fish community structure. This method allows for decisions to be made based on management scenarios at various flow conditions.

Update on Work of Gaging Subgroup

Drought regions were overlaid on a map with the existing flow gaging network, partial record sites and discontinued sites. The subgroup assessed potential ways to enhance the network immediately and in the long term. Recommendation is to comprehensively describe a more thorough approach to evaluating the network for the various needs. The group is looking at reports to put information together so the committee can make recommendations as to the monitoring needs for the state.

Education and/or Outreach Needs for Streamflow

Education Subcommittee is soliciting ideas for any education and outreach needs by each of the subcommittees. After some discussion the following areas were identified:

1. Education of general public to raise awareness of water resource management issues (quantity and quality considerations) to include topics such as competing uses, stressed basins and impacts of human activities on streamflow and water quality.

2. Education of general assembly on needs for stream gaging; why it is important, how the use and protection of the state's water resources are hampered by lack of data.

3. Education of local zoning and planning officials, regarding sustainable development and other water resource management implications of local land use decisions, with technical assistance through the Cooperative Extension.

Next Steps

The subcommittee need to have a draft of the recommendations for the WAPAC by the end of August. It was agreed that a group of the subcommittee will meet prior to the next meeting to develop a first version of the working draft which will be available at the next meeting. The group consists of Kathy Crawley, Rich Blodgett, Ralph Abele, Carlene Newman, Alisa Richardson, Liz Scott and possibly Steve Donohue.

Next meeting
Next meeting was scheduled for 1:00 PM, August 18, 2003 at DEM